Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:

National Status and Trends: Bioeffects Program - Southwest Puerto Rico Chemical Contaminant Assessment Summary

1.2. Summary description of the data:

The purpose of the project was to characterize the extent and magnitude of chemical contamination in southwest Puerto Rico, as part of a larger effort to link coral condition with chemical contamination. The study area extended from Guanica Bay west past the town of La Parguera. The Puerto Rico Planning Board has classified the terrestrial and marine environments of the study area as a Zone of Special Planning, and the Puerto Rico Department of Natural and Environmental Resources has designated the marine environment as a Natural Reserve. In May 2005, a reconnaissance mission resulted in the collection of 71 sediment samples that were used to characterize sediments in the study area in terms of total organic carbon (TOC). In August 2005, sediments were collected from 43 sites, randomly selected within the high and low TOC strata, using standard NSandT Program protocols, for contaminant analysis. A broad suite of chemical contaminants were analyzed in the sediment samples including polycyclic aromatic hydrocarbons (PAHs), chlorinated pesticides including DDT and its metabolites, polychlorinated biphenyls (PCBs), major and trace elements, butyltins, and polybrominated flame retardants (PBDEs). Coral tissues (mustard hill coral, Porites astreoides) were collected at eight sites and were analyzed for PAHs, chlorinated pesticides including DDT and its metabolites, PCBs, major and trace elements, and butyltins. Water samples were analyzed for total nitrogen and total phosphorus. This project provides valuable baseline data on sediment and coral tissue chemical contamination that is georeferenced and posted on the internet through the NOAA's National Status and Trends data portal.

1.3. Is this a one-time data collection, or an ongoing series of measurements?

One-time data collection

1.4. Actual or planned temporal coverage of the data:

2005

1.5. Actual or planned geographic coverage of the data:
W: -67.12399, E: -66.91005, N: 17.96895, S: 17.91522

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)

1.7. Data collection method(s):
(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:
NCCOS Scientific Data Coordinator

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:

2.4. E-mail address:
NCCOS.data@noaa.gov

2.5. Phone number:

3. Responsible Party for Data Management

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:
NCCOS Scientific Data Coordinator

3.2. Title:
Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Process Steps:

- 2005-01-01 00:00:00 - Coral Tissue Collection Mustard hill coral, Porites astreoides, was collected and analyzed from eight sites. Samples were collected from the vessel Aquanauta using a GPS programmed with the station coordinates. The coral samples were taken by NCCOS SCUBA divers in August 2005 using a hammer and an acetone-rinsed punch. The punch produced a coral core with a diameter of 1.2 cm and a similar core length. Approximately 20 cores were taken at each site and placed in a 50ml Teflon centrifuge tube underwater. The tube was then brought to the surface, drained of water and placed immediately in a dewar charged with liquid nitrogen. At the end of the mission, the dewars were shipped to the NOAA Hollings Marine Laboratory in Charleston, South Carolina and the samples were stored at -80 C prior to processing.
- 2005-01-01 00:00:00 - Collection of Water Samples for Nutrient Analysis Water samples were analyzed from 47 sites for total nitrogen and phosphorus, and were collected by submerging a labeled 125 ml HDPE (high density polyethylene) bottle beneath the water surface, capping it and then placing it on ice.
- 2005-01-01 00:00:00 - Data Preparation and Sample Processing -Fields are arranged as follow: Sample Type; Container; Field Holding; Lab Storage; Max Holding; SEDIMENT - Organic contaminants; I-Chem glass jars; Wet ice (4C); Freezer (-20C); 1 year; SEDIMENT - Inorganic contaminants; I-Chem glass jars; Wet ice (4C); Freezer (-20C); 1 year;SEDIMENT - Total organic Carbon; I-Chem glass jars; Wet ice (4C); Freezer (-20C); 1 year;CORAL TISSUE - Organic contaminants; Teflon Bottle; Wet ice (4C); Freezer (-80C); 1 year;CORAL TISSUE - Inorganic contaminants; Teflon Bottle; Wet ice (4C); Freezer (-80C); 1 year;WATER SAMPLES - Total nitrogen, phosphorus; HDPE bottle; Wet ice (4C); Frozen (-10 degC); 3 months
- 2005-01-01 00:00:00 - Sediment Sample Analysis PAHs were analyzed using gas chromatography/mass spectrometry in the selected ion monitoring mode. PCBs were analyzed using gas chromatography/electron capture detection. Organochlorine pesticides were also analyzed using gas chromatography/electron capture detection. Butyltins were quantified using gas chromatography/flame photometry. Silver, cadmium, copper, lead, antimony, and tin were analyzed using inductively coupled plasma - mass spectrometry. Aluminum, arsenic, chromium,

iron, manganese, nickel, silicon and zinc were analyzed using inductively coupled plasma - optical emission spectrometry. Mercury was analyzed using cold vapor - atomic absorption spectrometry. Selenium was analyzed using atomic fluorescence spectrometry. Total metal was analyzed. Additional information on the protocols used for the analysis of the organic and inorganic contaminants can be found in Kimbrough et al. (2006), and Kimbrough and Lauenstein (2006), respectively.
- 2005-01-01 00:00:00 - Coral Tissue Processing - The coral tissues were processed using the protocols found in Downs et al. (2005). Briefly, the corals were ground in an acid washed, solvent-rinsed (acetone) mortar and pestle. Liquid nitrogen was added before the grinding commenced to cool the mortar, and during the grinding process to prevent the tissues from thawing, and to keep the coral matrix brittle to facilitate the grinding process. The ground coral was then placed into a precleaned jar, and then frozen. Coral Tissue Analysis - TDI-Brooks International conducted the organic and inorganic analyses for coral tissues. Additional information on the protocols used for the analysis of the organic and inorganic contaminants can be found in Kimbrough et al. (2006), and Kimbrough and Lauenstein (2006), respectively.
- 2005-01-01 00:00:00 - Analysis of Water Samples for Total Nitrogen and Total Phosphorus Water samples were analyzed for total nitrogen and total phosphorus using an autoanalyzer following persulfate oxidation using the methods of Hansen and Koroleff (1999).
- 2005-01-01 00:00:00 - Name of derived values Sediment grain size; sediment total organic carbon (TOC); total inorganic carbon (TIC). Inorganic contaminants: trace metals measured are arsenic (As), silver (Ag), copper (Cu), cadmium (Cd), chromium (Cr), mercury (Hg), lead (Pb), manganese (Mn), nickel (Ni), selenium (Se), antimony (Sb) and zinc (Zn) Organic contaminants: chemicals with similar structural properties were summed and reported as Totals; in addition to their individual measured concentrations. The components of these totals are as follows: Total DDT = sum of concentrations of ortho and para forms of parent and metabolites 2,4'DDE; 4,4'DDE; 2,4'DDD; 4,4'DDD; 2,4'DDT and 4,4'DDT. Total Chlordane = sum of concentrations of four compounds alpha-chlordane, trans-nonachlor, heptachlor, heptachlorepoxide. Total Dieldrin = sum of concentrations of two compounds aldrin and dieldrin. Total Butyl tin = sum of concentrations of parent compound and metabolites monobutyltin, dibutyltin, tributyltin, [concentrations are in terms of tin] . Total PCB = the sum of the concentrations of eighteen congeners: PCB8/5, PCB18, PCB28, PCB44, PCB52, PCB66, PCB101, PCB105, PCB118, PCB128, PCB138, PCB153/132/ 168, PCB170/190, PCB180, PCB187, PCB195/208, PCB206, and PCB209. Total low molecular weight (lmw) PAHs = sum of concentrations of twelve 2- and 3-ring PAH compounds: naphthalene, 2-methylnaphthalene, 1-methylnaphthalene, biphenyl, 2, 6-dimethylnaphthalene, acenaphthene, acenaphthylene, 1,6,7-trimehtylnaphthalene, fluorine, phenanthrene, 1-methylphenanthrene, and anthracene. Total high molecular weigh (hmw) PAHs = sum of concentrations of twelve 4-and more-ring PAH compounds: fluoranthene, pyrene, benz[a]anthracene, chrysene, benzo[b]fluorantene, benzo[k]fluoranthene, benzo[e]pyrene, benzo[a]

pyrene, perylene, dibenzathracene, indeno[1,2,3-cd]pyrene, and benzo[ahi] perylene. Total PAH = low molecular weight PAHs plus high molecular weigh PAHs (sum of 24 PAH compound concentrations). Total chlorinated benzenes = Tetrachlorobenzene 1,2,4,5, Tetrachlorobenzene 1,2,3,4 Pentachlorobenzene, Hexachlorobenzene and Pentachloroanisole Total cyclodienes = Heptachlor, Heptachlor Epoxide, Oxychlordane, Alpha Chlordane, Gamma Chlordane Cis-Nonachlor, Trans-Nonachlor, Aldrin, Dieldrin, Endrin, Endosulfan II Total HCH = Alpha HCH, Beta HCH, Gamma HCH, Delta HCH Total unsubstituted high molecular weigh PAHs = Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b) fluoranthene, Benzo(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-c,d)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene Total substituted high molecular weigh PAHs= C1-Fluoranthenes/Pyrenes, C1-Chrysenes, C2-Chrysenes, C3-Chrysenes, C4-Chrysenes Total unsubstituted low molecular weigh PAHs=Naphthalene, Biphenyl Acenaphthylene, Acenaphthene, Fluorene, Anthracene, Phenanthrene, Dibenzothiophene Total substituted low molecular weigh PAHs= C1-Naphthalenes, C2-Naphthalenes, C3-Naphthalenes, C4-Naphthalenes, C1-Fluorenes, C2-Fluorenes, C3-Fluorenes, C1-Phenanthrenes/ Anthracenes, C2-Phenanthrenes/Anthracenes, C3-Phenanthrenes/Anthracenes, C4-Phenanthrenes/Anthracenes, C1-Dibenzothiophenes, C2-Dibenzothiophenes, C3-Dibenzothiophenes Note: 2-Methylnaphthalene 1-Methylnaphthalene 2,6-Dimethylnaphthalene 1,6,7-Trimethylnaphthalene or 1-Methylphenanthrene were not double counted in the substituted totals. Total measured PCBs = PCB8/5, PCB103, PCB18, PCB28, PCB29, PCB31, PCB44, PCB45, PCB49, PCB52, PCB56/60, PCB66, PCB70, PCB74/61, PCB87/115, PCB95, PCB99, PCB101/90, PCB105, PCB110/77, PCB118, PCB128, PCB138, PCB146, PCB149/123, PCB151, PCB153/132/168 ,PCB156/171/ 202, PCB158, PCB170/190, PCB174, PCB180, PCB187, PCB183, PCB194, PCB195/208, PCB198, PCB201/173/157, PCB206, PCB209, ... (continued...)
- 2005-01-01 00:00:00 - (continued from above) Total PBDEs in sediments = BDE 1, BDE 2, BDE 3, BDE 10, BDE 7, BDE 8, BDE 11, BDE 12, BDE 13, BDE 15, BDE 30, BDE 32, BDE 17, BDE 25, BDE 33, BDE 28, BDE 35, BDE 37, BDE 75, BDE 49/71, BDE 47, BDE 66, BDE 77, BDE 100, BDE 119, BDE 99, BDE 116, BDE 118, BDE 85, BDE 126, BDE 155, BDE 154, BDE 153, BDE 138, BDE 166, BDE 183, BDE 181 (end continuation)
- 2005-01-01 00:00:00 - REFERENCES Downs, C., M. McField, J. Vasquez, and L. Agudelo. 2005. Contaminant Monitoring Protocol Assessing the Effectiveness of Agricultural Better Management Practices in the Mesoamerican Reef. Haereticus Environmental Laboratory and World Wildlife Fund. 32pp. Hansen, H. P. and F. Koroleff (1999). Determination of Nutrients. Methods of Seawater Analysis. K. Grasshoff, K. Kremling and M. Ernhardt. New York, Wiley-VCH: 159-251. Kimbrough, K. L., and G. G. Lauenstein (Editors). 2006. Major and trace element analytical methods of the National Status and Trends Program: 2000-2006. Silver Spring, MD. NOAA Technical Memorandum NOS NCCOS 29, 19 pp. Kimbrough, K. L., G. G. Lauenstein and W. E. Johnson (Editors). 2006. Organic Contaminant Analytical Methods of the National Status and Trends Program: Update 2000-2006. NOAA Technical Memorandum NOS NCCOS 30. 137 pp. Lauenstein, G. G. and A. Y. Cantillo (

eds.) 1993. Sampling and analytical methods of the National Status and Trends Programs, National Benthic Surveillance and Mussel Watch Projects, 1984-1992. NOAA Technical Memorandum NOS ORCA 71, Vol 1. Lauenstein, G.G., and A.Y. Cantillo. 1998. Sampling and analytical methods of the National Status and Trends Program Mussel Watch Project: 1993-1996 update. NOAA Technical Memorandum NOS ORCA 130. 233pp.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:
- 1.6. Type(s) of data
- 1.7. Data collection method(s)
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.2. Name of organization of facility providing data access
- 7.2.1. If data hosting service is needed, please indicate
- 7.3. Data access methods or services offered
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:
https://www.fisheries.noaa.gov/inport/item/39056

6.4. Process for producing and maintaining metadata
(describe or provide URL of description):
Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access
NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:
https://products.coastalscience.noaa.gov/collections/ltmonitoring/nsandt/default.aspx
https://products.coastalscience.noaa.gov/collections/ltmonitoring/nsandt/default.aspx

7.3. Data access methods or services offered:

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):

National Centers for Coastal Ocean Science - Silver Spring, MD

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.